THE PENNSYLVANIA INTERACTIVE GAMING ASSESSMENT:

ONLINE GAMBLING REPORT 2022

Prepared by
The Pennsylvania State University

Authorship

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Miranda P. Kaye, Director of the Social Science Research Institute's Survey Research Center, was responsible for oversight of data collection, as well as data management, data cleaning, contributed to the section of the report related to methodology, and provided revisions to the report.

Mikael B. Ahlgren, Director of Gaming Initiatives, The Pennsylvania State University, provided subject matter expertise to the study design and provided revisions to the report.

Acknowledgements

Report Summary

This report represents the results of the second year of the interactive gaming assessment of Pennsylvania. The focus of this report is (1) establishing the prevalence of online gambling in Pennsylvania, (2) the demographic characteristics of Pennsylvania online gamblers, and (3) the characteristics associated with experiencing problems with online gambling.
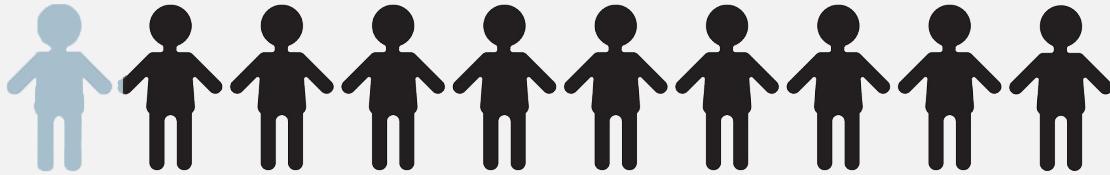

Approximately 1 in 10 Pennsylvanians has gambled online in the past 12 months

Online Gambling

Online gambling prevalence was stable from year 1 to 2 of the study, with prevalence estimates at 11.0%, 95% CI [9.7, 12.5] (11.1% year 1). Additionally, approximately 68.3%, 95% CI [66.2, 70.3], of Pennsylvanians had gambled on any gambling format (either in-person or online) which exceeded prior estimates of gambling in the state (28%; Pennsylvania Department of Health, 2021).

PROFILE OF THE TYPICAL ONLINE GAMBLER
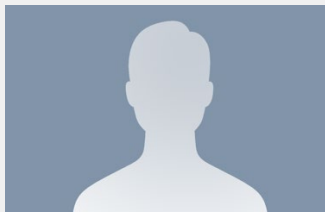
Marital Status:	Married
Education:	Bachelor's Degree +
Gender:	Man
Employment Status:	Employed
Age:	Mid to Late 30s
Income:	>$50,000
Location:	South West Pennsylvania
Preferred Online Format:	Sports Betting
Race:	White
Reason They Gamble Online:	Enjoyment

Online Gambling Problems

Approximately **one** in **three** online gamblers expressed that they had experienced at least one problem with their gambling in the past 12 months.

**1.7%** of PA Residents Have Called 1-800-GAMBLER

Report Background

Online gambling, also referred to as Interactive Gaming or iGaming, was legalized in the state of Pennsylvania in 2017 through PA Act 42 of 2017. As of 2022 there are a total of 19 iGaming operations and 14 online sports betting locations in Pennsylvania. Two new online sports wagering locations opened during the 2021/2022 state fiscal year and three iGaming sites opened the same period. During the 2021/2022 fiscal period these operators brought in over $1.2 billion in revenue from iGaming (including slots, table games and poker), over $267 million in revenue from online sports betting, and over $27 million from fantasy sports (note that fantasy sports revenue is not separated between offline and online; PGCB, 2022).

Pennsylvania Helpline Use

The Council on Compulsive Gambling of Pennsylvania, Inc. (CCGP) is a non-profit group that operates a 24/7, free, live, and confidential helpline (1-800-GAMBLER) for gamblers, as well as family members, or friends of those that may be experiencing problem with their gambling in the state of Pennsylvania. The total number of intake specific calls to the hotline remained fairly stable until July 2020 to June 2021 where total call volume saw a 58% increase compared to 2019-2020 reporting period (Figure 1; CCGP, 2017, 2018, 2019, 2020, 2021, 2022a, 2022b). Call volume

Figure 1. Total intake calls and online gambling specific calls to 1-800-GAMBLER between July 2016 and June 2022.
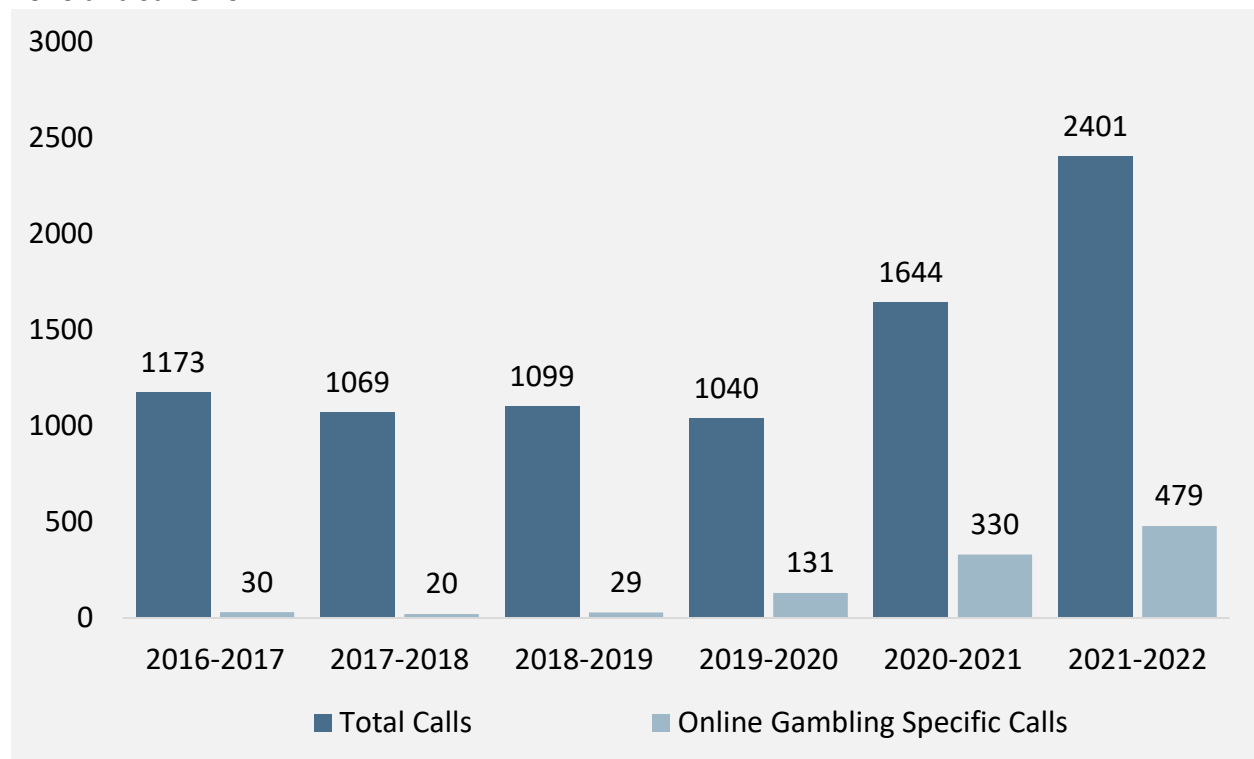
between July 2021 and June 2022 saw an additional increase of 46% compared to 2020-2021. Calls that specifically mentioned online gambling as the most problematic gambling format for the individual began to increase in the July 2019 to June 2020 reporting period; approximately 2% of calls indicated online gambling between July 2016 and June 2019 and this increased to over 12% of total calls in the July 2019 to June 2020. Online specific calls peaked at 20% of total calls between July 2020 and June 2021 and remained stable at 20% between July 2021 and June 2022. In addition to these helpline calls, the PGCB reported a 120% increase in iGaming specific self-exclusions during the 2021/2022 state fiscal year, increasing from 1,041 to 2,295 (PGCB, 2022).

Year One Report (2020 to 2021)

This study was conducted to understand the impacts of online gambling legalization within the state of Pennsylvania, including the prevalence rates, demographics of online gamblers, and potential gambling problems associated with online gambling. Researchers at Penn State University, in partnership with the Department of Drug and Alcohol Programs, began an annual assessment of the online gambling behaviors of Pennsylvania residents utilizing a random draw samples of phone numbers (both landlines and cell phones) from Pennsylvania each year.

The first year of the study found that approximately 11.1% of Pennsylvania residents had engaged in online gambling of some form in the previous 12 months. These most common individual demographics were men, in their late 30s, white, living in a metropolitan area, held a bachelor's degree or an advanced degree, were employed, and had a household income exceeding $73,000. The most common format was online sports wagering. In addition, 65.2% of online gamblers also engaged in some form of offline gambling, with lottery being the most popular format offline. A minority of those that gambled online engaged in illegal online gambling, with 12% of online gamblers expressing they had engaged in some form of illegal online gambling (approximately 1.3% of the population of Pennsylvania). Of those that gambled online, nearly half (43.9%) had experienced at least one problem with their gambling.

2022 Assessment

During the second year of the study, changes were made to the study changed based on findings from the first year, particularly the questionnaire and in conducting calls were conducted. The questionnaires for both online and offline gambling were changed to eliminate filter questions and instead asking each participant whether they engaged in each specific format rather than first broadly asking whether they engaged in online or offline gambling in the previous 12 months. The revised questionnaire also included questions regarding gambling motivations, reasons for ending an online gambling session, and beliefs regarding the harms and benefits of online gambling.

Online Gambling

Within Pennsylvania, approximately 11.0%, 95% CI [9.7, 12.5], of residents aged 18 and older had engaged in online gambling in the past 12 months. There was significant variation in online gambling engagement, ranging from 5.5% of residents in the North Western region to 15.2% in the South Western region (see Figure 2; note that 1.2% of respondents did not report the region of PA they lived in, of those that did not report a region, 13.9% engaged in online gambling). The majority reported having gambled online using a single device (62.5%), with the most popular device used to gamble online being a mobile phone (75.5%).

11.0%

Approximately 11% of Pennsylvanians report that they have engaged in online gambling in the past 12 months.
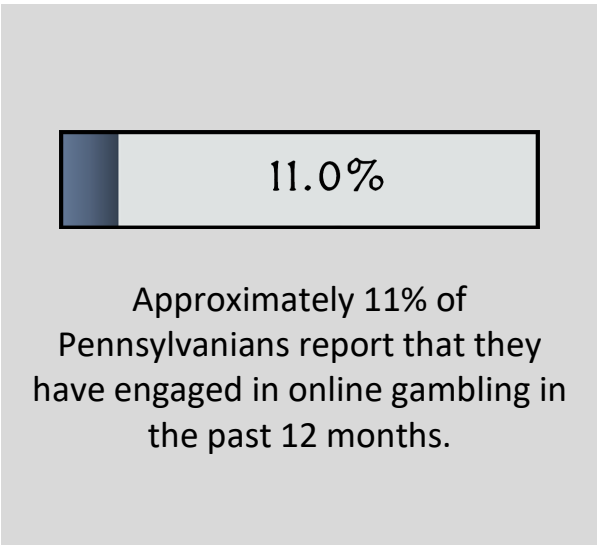
Figure 2. Online gambling prevalence rates by region in the State of Pennsylvania.

5.5%, 95% CI [3.4, 8.7], North West

12.9%, 95% CI [9.4, 17.3], North Central

7.8%, 95% CI [4.8, 12.2], North East

15.2%, 95% CI [12.1, 19.0], South West

8.6%, 95% CI [5.9, 12.5], South Central

12.0%, 95% CI [9.4, 15.1], South East
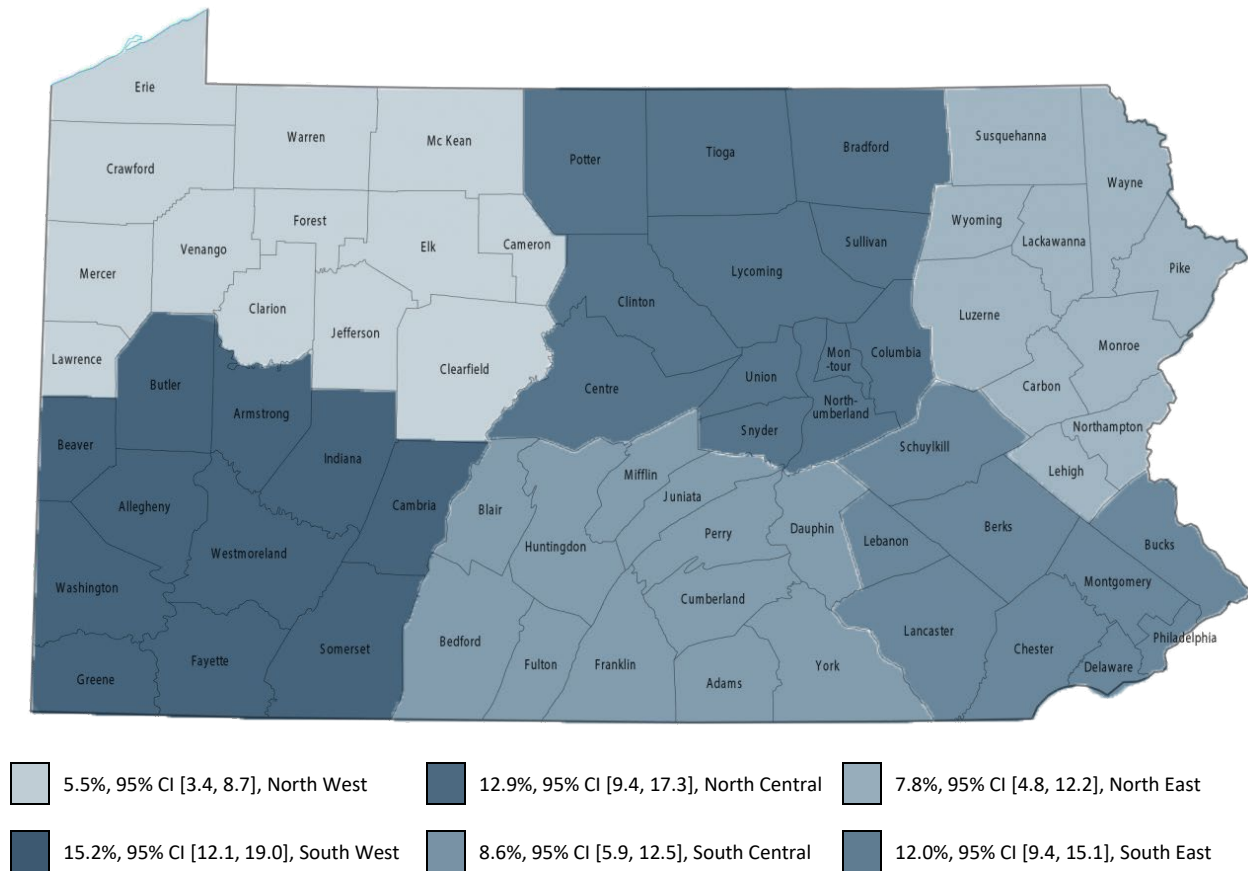
On average, online gamblers reported engaging in more than one format, with 51.5% engaging in two or more formats. The most commonly reported format was online sports betting; 39.5% of online sports bettors also bet on fantasy sports. Additionally, 13.3% of online gamblers reported having engaged in some form of offshore betting (1.5% of the total population). One-third (33.3%) indicated that online gambling was their preferred method of gambling. Approximately 30.1% of online gamblers indicated they gamble online with friends or social acquaintances. Figure 3 provides a detailed breakdown of the proportion of online gamblers engaging in each format.

Figure 3. The proportion of online gamblers that engage in each online gambling format.
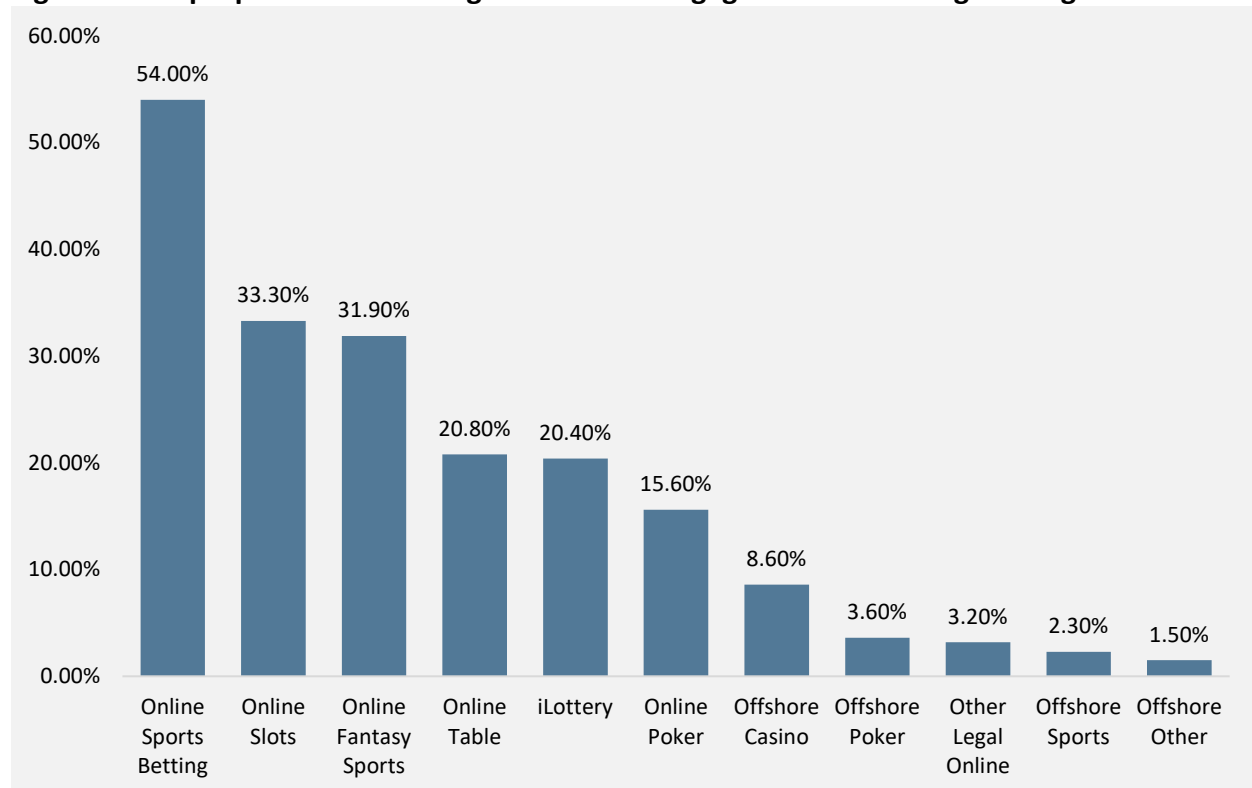
The average age of those engaging in online gambling was 38.86 years (SD=14.67)[1]. Men (66.1%) were more likely to engage in online gambling than women. The majority of online gamblers were white (72.9% including mixed race), 43.5% of online gamblers were married, and nearly two-thirds (62.6%) were employed. Almost half of those who gambled online (46.7%) had achieved a bachelor's degree or higher, and more than half (52.3%) had a household income of $50,000 or above. Table 1 provides a detailed breakdown of the demographic characteristics of online gamblers.

There were a variety of motivations reported for engaging in online gambling, with the most common being for enjoyment (77.30%). Other common motives were related to the features of online play (i.e., convenience and availability; 66.1% and 63.7%) and financial (i.e., to win money; 63.4%; see Figure 4 for a summary). The primary reason stated for ending an online gambling session was having something else to do (62.4%). Other common reasons were financial, both

Table 1. Demographics of Pennsylvania online gamblers.

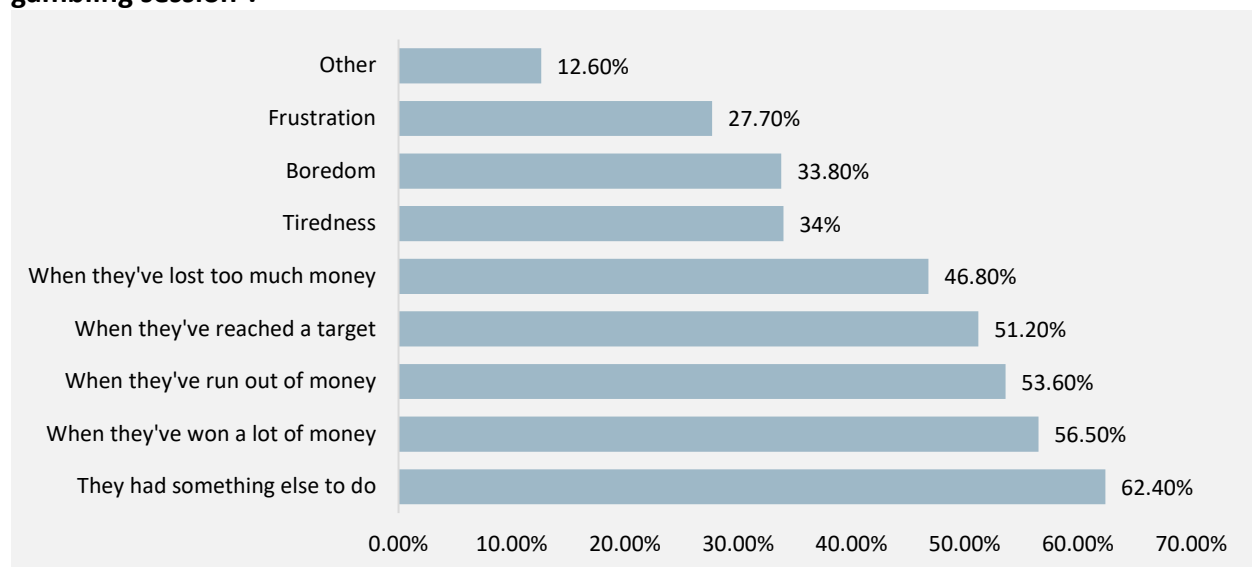| Demographic Category		Percent
Gender	**Man**	**66.1%**
	Woman	31.4%
	Other	2.5%
Race/Ethnicity*	Black/African American	24.2%
	White	**72.9%**
	Asian	5.1%
	Native American/Alaska Native	1.4%
	Some other race	1.0%
* More than one response	Hispanic, Latino, or Spanish origin	12.8%
allowed.	Prefer not to answer	1.8%
Employment	**Employed**	**62.6%**
	Out of work	9.8%
	Homemaker	0.4%
	Student	0.6%
	Retired	7.7%
	Unable to work	7.4%
	Prefer not to answer	9.1%
	Missing	2.4%
Marital Status	**Married or living with a partner**	**43.53%**
	Divorced	6.8%
	Widowed	3.2%
	Single/Never married	36.3%
	Prefer not to answer	7.9%
	Missing	2.4%
Education	Less than high school	1.3%
	High school or GED	19.0%
	Some college	15.7%
	Associates degree	5.9%
	Bachelor's degree	**36.3%**
	Master's degree	7.3%
	Professional degree	0.1%
	Doctorate degree	3.0%
	Trade school	1.2%
	Prefer not to answer	7.6%
	Missing	2.4%
Income	Less than $10,000	3.5%
	$10,000 - $14,999	4.8%
	$15,000-$24,999	5.4%
	$25,000-$34,999	3.7%
	$35,000-$49,999	9.0%
	$50,000-$74,999	14.1%
	$75,000-$99,999	**14.6%**
	$100,000-$149,999	8.0%
	$150,000-$199,999	4.0%
	$200,000-$249-999	4.0%
	$250,000 or more	7.6%
	Prefer not to answer	19.0%
	Missing	2.4%

related to wins (i.e., won a lot of money; 56.5%) and losses (i.e., run out of money or lost too much money; 53.6% and 46.8%; see Figure 5 for a summary). On average, individuals expressed having approximately 6-7 different motives for why they choose to gamble online (Mean = 6.7, SD=2.8) and 4-5 different motivations for ending online gambling sessions (Mean = 4.6, SD = 2.1). Among online gamblers, 34.4% believed that the harms of online gambling outweighed the benefits (19.2% believed that benefits outweighed harms), as well 44.7% believed that all forms of gambling should be legal (an additional 37.8% believed some should be legal and some illegal).

Figure 4. The proportion of online gamblers that express gambling for particular motives[*].

Motive	Percentage
Other	13.60%
As an escape	18.10%
For the high speed play online	26.00%
For the competition	28.10%
Because it's anonymous	31.70%
For stimulation	32.20%
For the challenge	35.10%
For the flexibility in stake size	45.20%
Because of the ability to bet at own pace	61.10%
To win money	63.40%
Because of the availability	63.70%
Because of the convenience	66.10%
For enjoyment	77.30%
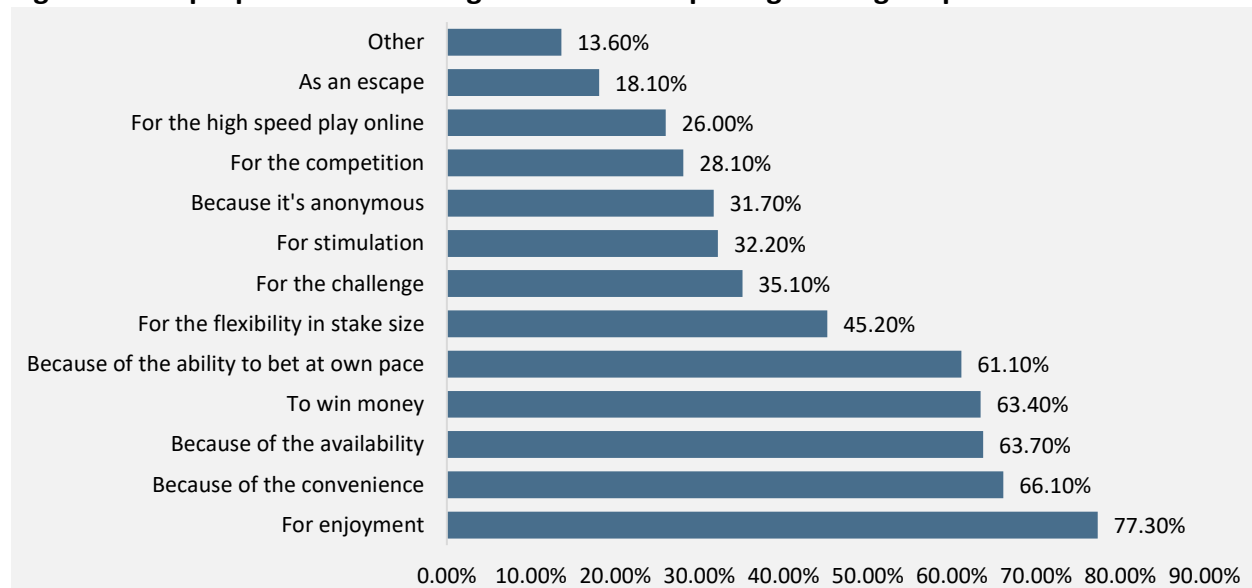
*participants could indicate more than one motive for online gambling

Figure 5. The proportion of online gamblers that express motives for ending an online gambling session[*].

Motive	Percentage
Other	12.60%
Frustration	27.70%
Boredom	33.80%
Tiredness	34%
When they've lost too much money	46.80%
When they've reached a target	51.20%
When they've run out of money	53.60%
When they've won a lot of money	56.50%
They had something else to do	62.40%

*Participants could indicate more than one motive for ending an online gambling session

Online Gambling Problems
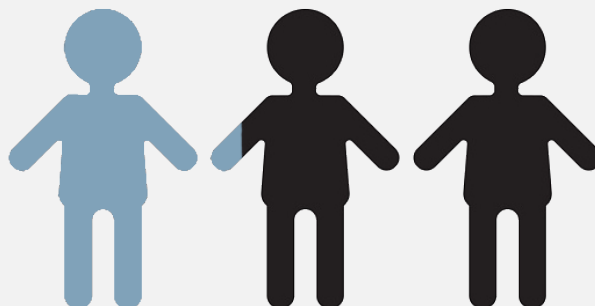
More than 1 in 3 people who have gambled online in the past 12 months have experienced at least one problem with their gambling

Of those that have engaged in online gambling in the 12 months 36.7%, 95% CI [30.6, 43.2], reported experiencing at least one problem with their gambling (Note that 16.3% of online gamblers did not complete the questions on problem gambling; Table 3 breaks down the number of online gamblers that have specific numbers of problems with their gambling)[2]. The most commonly reported problem was making attempts to cut down, control, or stop gambling (26.5% of online gamblers; Table 4 endorsement rates include the total sample of online gamblers). On average, those experiencing at least one gambling problem engaged in two different online gambling formats (*SD*= 1.58). Correlation between the number of gambling problems an individual indicated they had experienced and the number of online gambling formats an individual engaged in was positive and significant (0.390, *p* < .01), suggesting that engaging in an increased number of online gambling formats was associated with an increased number of gambling problems.

The average age of those experiencing at least one problem with online gambling was 38.32 years (*SD*=13.65). Men (58.7%) were more likely to experience a problem than women. The majority of those with a problem were white (74.9% including mixed race), however compared to online gamblers generally, the proportion of those that were Asian was larger for those experiencing a problem (13.8% versus 5.1%). Approximately half (49.4%) of those with a problem were married and 78.7% were employed. Almost half of those who gambled online (45.2%) had achieved a bachelor's degree or higher, and more than half (54.4%) had a household income of $50,000 or above. Table 2 provides a detailed breakdown of the demographic characteristics of online gamblers.

Table 2. Demographics of Pennsylvania online gamblers experiencing at least one problem with their gambling.

Demographic Category		Percent
Gender	**Man**	**58.7%**
	Woman	38.3%
	Other	3.0%
Race/Ethnicity*	Black/African American	19.6%
	White	**74.9%**
	Asian	13.8%
* More than one response allowed.	Hispanic, Latino, or Spanish origin	3.7%
	Prefer not to answer	0.9%
Employment	**Employed**	**78.7%**
	Out of work	10.2%
	Homemaker	0.6%
	Student	1.1%
	Retired	2.4%
	Unable to work	0.5%
	Prefer not to answer	6.5%
Marital Status	**Married or living with a partner**	**49.4%**
	Divorced	8.8%
	Widowed	3.2%
	Single/Never married	35.9%
	Prefer not to answer	2.6%
Education	Less than high school	2.8%
	High school or GED	28.6%
	Some college	16.2%
	Associates degree	4.7%
	Bachelor's degree	**34.4%**
	Master's degree	10.8%
	Prefer not to answer	2.6%
Income	Less than $10,000	1.8%
	$10,000 - $14,999	0.6%
	$15,000-$24,999	5.0%
	$25,000-$34,999	3.6%
	$35,000-$49,999	**14.0%**
	$50,000-$74,999	7.9%
	$75,000-$99,999	13.4%
	$100,000-$149,999	4.1%
	$150,000-$199,999	9.2%
	$200,000-$249-999	8.0%
	$250,000 or more	11.8%
	Prefer not to answer	20.6%

Table 3. The percentage of online gamblers that express having a set number of problems with their gambling.

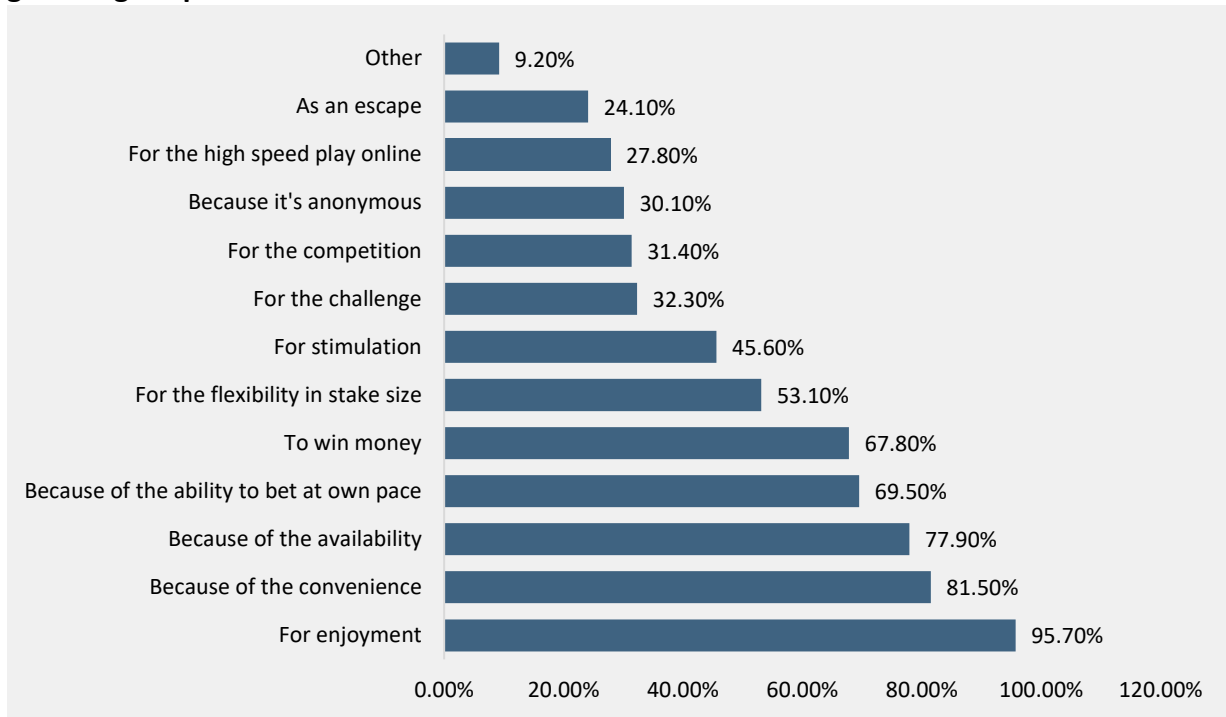| Number of Problems	% of Online Gamblers	95% CI	
		Lower	Upper
1 problem	23.1%	18.0	29.1
2 problems	11.8%	8.2	16.7
3 problems	1.6%	0.1	4.6

Online gamblers with at least one gambling problem, were significantly more likely to indicate that their motivation(s) for online gambling was to bet at their own pace, for the challenge, and to win money compared to those that gamble online and had no gambling problems (see Figure 6 for a summary of the motivations to online gamble among those with a problem). Those with at least one gambling problem were significantly more likely to indicate that their motivation for ending an online gambling session was because of frustration, due to boredom, they had lost too much money, and other reasons compared to those that gamble online and had no gambling problems (see Figure 7 for a summary of the motivations to end an online gambling session among those with a problem). Examining the beliefs regarding whether all types of gambling should be legal, of those with a problem significantly more believed that all types should be legal (62.6%) compared to those that did not have any gambling problems (34.4%). There were no significant differences in the beliefs regarding the harms of online gambling with 35.2% of those that have at least one gambling problem believing that the harms outweigh the benefits, and 33.9% of those that gamble online and had no problems.

Table 4. Assessment of gambling problems among those who have engaged in online gambling in the past 12 months.

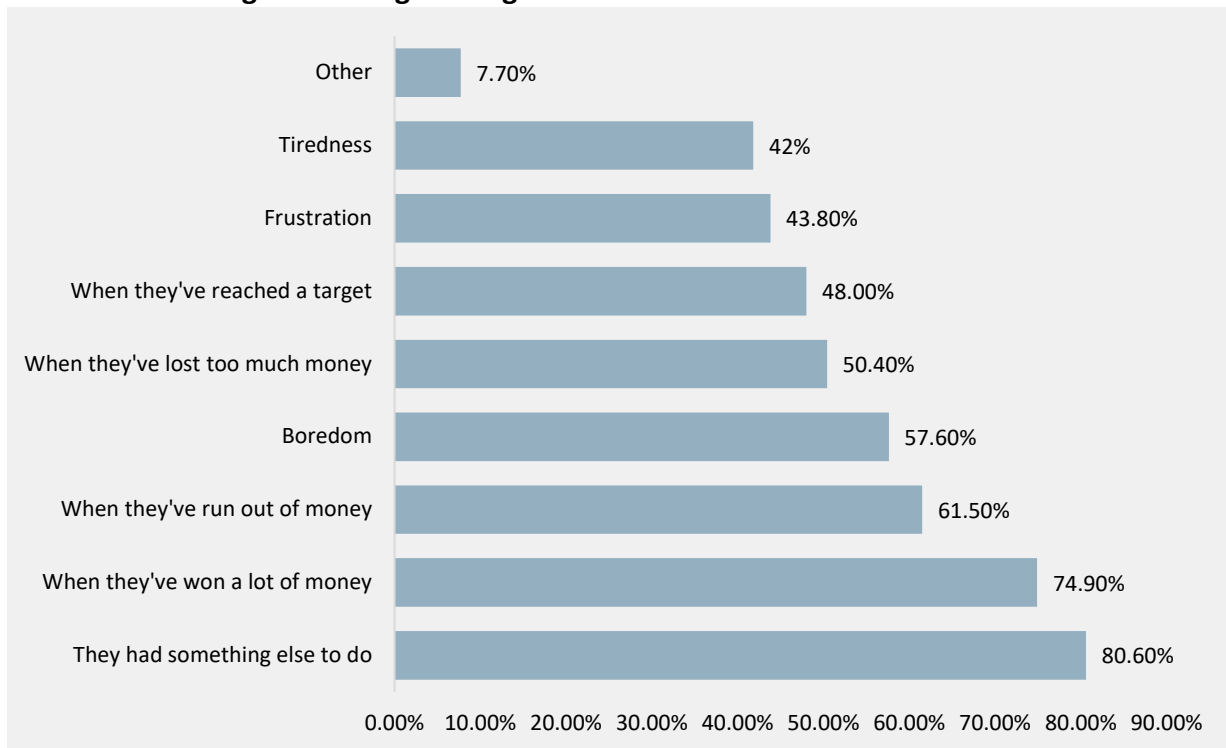| Question:	Endorsement Rate
In the past 12 months, would you say you have been preoccupied with gaming or gambling?	5.6%
In the past 12 months, would you say that you need to gamble with larger amounts of money to get the same feeling of excitement?	9.7%
In the past 12 months, have you often gambled longer, with more money, or more frequently than you intended to?	9.9%
In the past 12 months, have you made attempts to either cut down, control, or stop gambling?	26.5%
In the past 12 months, have you borrowed money, or sold anything, to get money to gamble?	0%

Approximately, 1.7% of Pennsylvanians report having contacted 1-800-GAMBLER or other gambling resources for themselves or others. Those who had not gambled online reported calling more frequently (1.7%) than those who had gambled online (1.4%) though this difference was not significantly different.

Figure 6. The proportion of online gamblers with at least one gambling problem that express gambling for particular motives[*].

Motive	Percentage
Other	9.20%
As an escape	24.10%
For the high speed play online	27.80%
Because it's anonymous	30.10%
For the competition	31.40%
For the challenge	32.30%
For stimulation	45.60%
For the flexibility in stake size	53.10%
To win money	67.80%
Because of the ability to bet at own pace	69.50%
Because of the availability	77.90%
Because of the convenience	81.50%
For enjoyment	95.70%

*participants could indicate more than one motive for online gambling

Figure 7. The proportion of online gamblers with at least one gambling problem that express motives for ending an online gambling session[*].

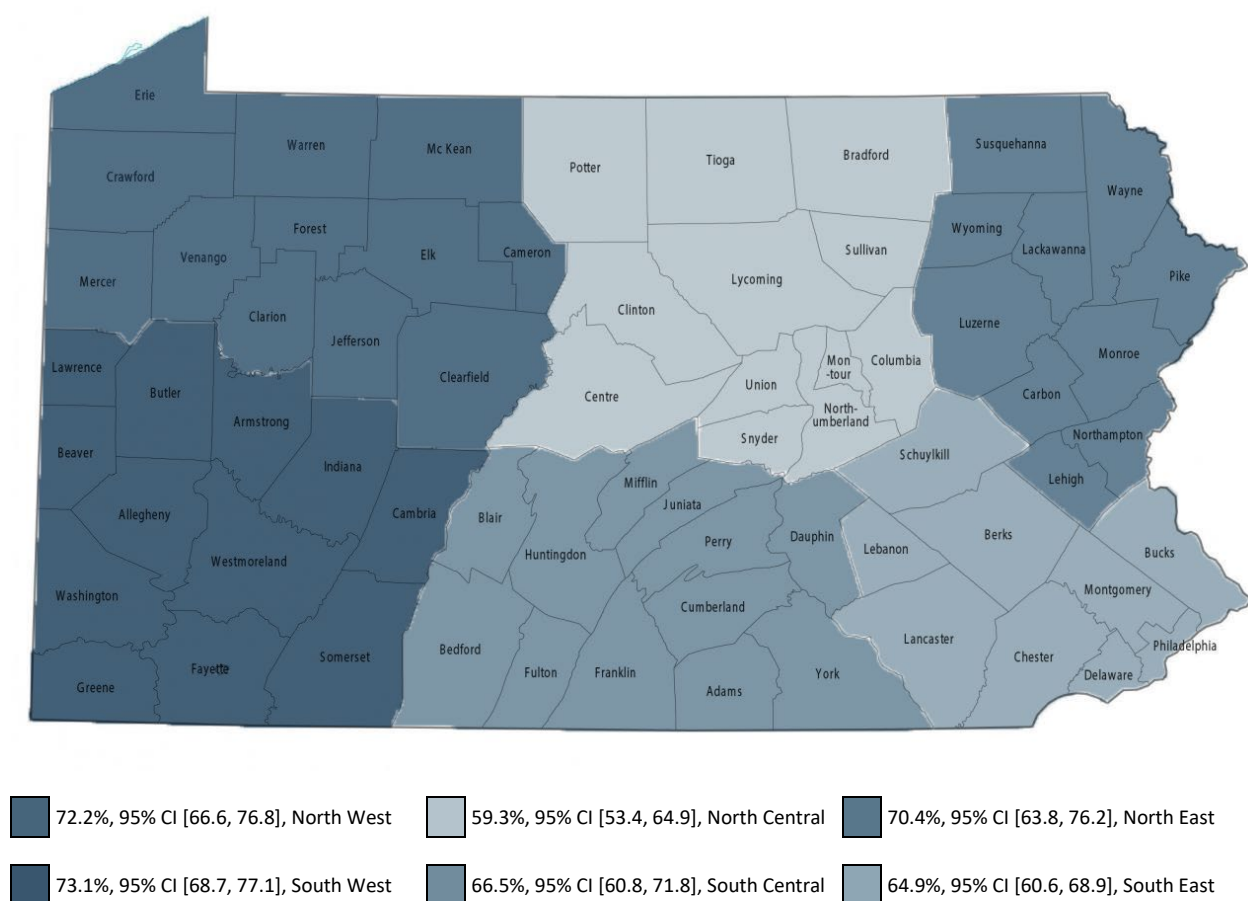| Motive	Percentage
Other	7.70%
Tiredness	42%
Frustration	43.80%
When they've reached a target	48.00%
When they've lost too much money	50.40%
Boredom	57.60%
When they've run out of money	61.50%
When they've won a lot of money	74.90%
They had something else to do	80.60%

*participants could indicate more than one motive for ending an online gambling session

Offline Gambling

Within Pennsylvania, approximately 67.5%, 95% CI [65.4, 69.5] of residents aged 18 and older had engaged in offline gambling in the past 12 months (2.1% did not complete this portion of the survey). There was significant variation in offline gambling engagement, ranging from 59.3% of residents in the North Central region to 73.1% in the South Western region (see Figure 8; note that 1.2% of respondents did not report the region of PA they lived in, of those that did not report a region, 50.4% engaged in online gambling). Among online gamblers, 90.2% indicated having gambled offline over the past year (2.4% did not answer).

Figure 8. Offline gambling prevalence rates by region in the state of Pennsylvania.

72.2%, 95% CI [66.6, 76.8], North West	59.3%, 95% CI [53.4, 64.9], North Central	70.4%, 95% CI [63.8, 76.2], North East
73.1%, 95% CI [68.7, 77.1], South West	66.5%, 95% CI [60.8, 71.8], South Central	64.9%, 95% CI [60.6, 68.9], South East

On average, offline gamblers engaged in 2.49 different offline gambling formats (*SD* = 1.53), with 69.8% reporting engaging in two or more different offline formats. Online gamblers engaged in 3.68 offline gambling formats on average (*SD* = 2.11), with 86.1% engaging in two or more different offline formats. Figure 9 provides a detailed breakdown of the proportion of offline only gamblers, as well as the proportion of online gamblers that engage in each offline format. Lotteries were the most popular formats that offline only and online/offline gamblers engaged in. Persons who gamble both online and offline had significantly higher participation in

Pennsylvania casino gambling, non-Pennsylvania casino gambling, Pennsylvania lotteries, fantasy sports betting, sports betting, horse racing or off-track betting, bingo, and private poker or card games than those who gambled only offline.

Figure 9. The proportion of offline only and gamblers that play both online and offline that engage in each offline gambling format.
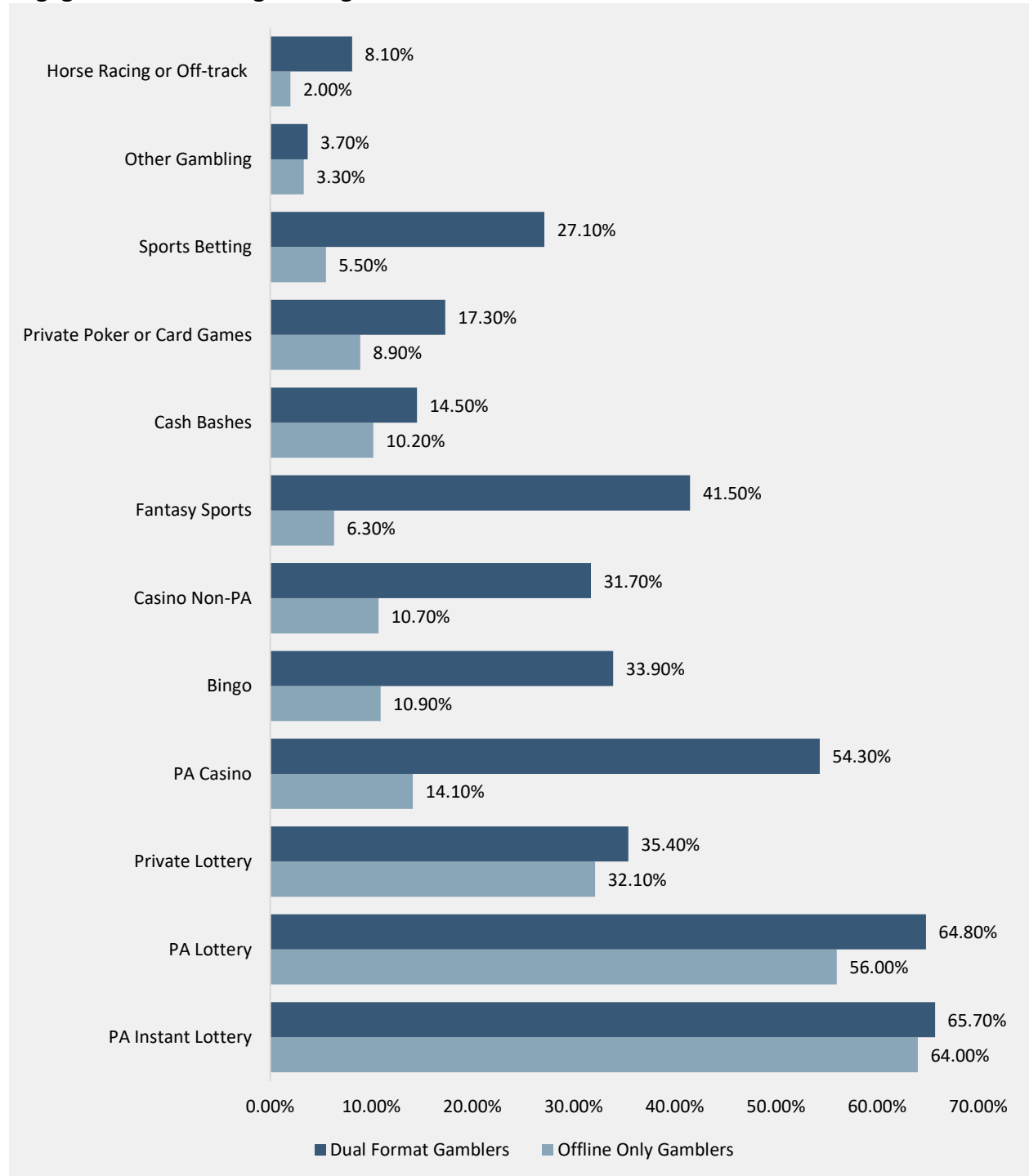
Note: Dual format here refers to those that gamble both online and offline.

Those who gamble both online and offline were significantly more likely to believe that all gambling formats should be legal than those that only gamble offline. Furthermore, those that gamble both on and offline were significantly less likely to report that the harms of online gambling outweigh the benefits.

On average, offline gamblers were significantly older than those that gambled online, with an average age of 48.83 years (*SD* = 17.69). Compared to online gamblers, there was a more even split between the genders with approximately 51.5% of offline gamblers being men. The majority of offline gamblers were also white (81.7% including mixed race). This proportion was higher than was found among online gamblers; there was a significant difference in the proportion of Black/African American gamblers, with online gamblers having a higher proportion of those that identify as Black/African American compared to offline only. Over half of offline gamblers (55.3%) were married, this was not significantly different than online gamblers. Slightly fewer offline gamblers indicated they were employed (55.5% versus 62.6%) though this was not significantly different and significantly fewer offline gamblers (36.8%) had achieved a bachelor's degree or higher compared to online gamblers. Finally, 46.4% had a household income of $50,000 or above, which was not significantly different than among online gamblers. A detailed breakdown of the demographic characteristics of offline gamblers can be found in Table 5.

Table 5. Demographics of Pennsylvania offline gamblers.

Demographic Category		Percent
Gender	**Man**	**51.5%**
	Woman	47.8%
	Other	0.5%
	Prefer not to answer	0.2%
Race/Ethnicity*	Black/African American	13.3%
	White	**81.7%**
	Asian	4.3%
	Native American/Alaska Native	1.4%
	Some other race	0.4%
* More than one response allowed.	Hispanic, Latino, or Spanish origin	9.6%
	Prefer not to answer	1.2%
Employment	**Employed**	**55.5%**
	Out of work	4.5%
	Homemaker	4.4%
	Student	3.2%
	Retired	23.2%
	Unable to work	5.8%
	Prefer not to answer	3.2%
	Missing	0.2%
Marital Status	**Married or living with a partner**	**55.3%**
	Divorced	6.7%
	Separated	1.5%
	Widowed	7.7%
	Single/Never married	26.0%
	Prefer not to answer	2.6%
	Missing	0.2%
Education	Less than high school	3.4%
	High school or GED	**26.9%**
	Some college	17.1%
	Associates degree	8.9%
	Bachelor's degree	25.4%
	Master's degree	8.5%
	Professional degree	1.6%
	Doctorate degree	1.3%
	Trade school	3.7%
	Prefer not to answer	3.0%
	Missing	0.2%
Income	Less than $10,000	4.0%
	$10,000-$14,999	3.4%
	$15,000-$24,999	6.7%
	$25,000-$34,999	8.1%
	$35,000-$49,999	7.7%
	$50,000-$74,999	**11.9%**
	$75,000-$99,999	11.4%
	$100,000-$149,999	10.0%
	$150,000-$199,999	5.4%
	$200,000-$249-999	4.0%
	$250,000 or more	3.7%
	Prefer not to answer	23.5%
	Missing	0.2%

Methodology

This section presents an overview of the methods used in selecting and recruiting the sample for the second year of the study.

Sampling Strategy

A dual frame random digit dial (DFRDD) including a combination of 50% landline and 50% cellular RDD samples, was used to represent adults aged 18 years or older across Pennsylvania who have access to either a landline or cellular telephone.

RDD Landline Sample Methodology. Half of the sample was generated using a directory-list assisted database of "active" or "working" blocks where each block is a set of 100 contiguous numbers identified by the first two digits of the last four digits of a telephone number (i.e., for the telephone number 814-777-2333, "23" is the 2-digit block). A block (area code + exchange + 2-digit block number) is termed to be working if three or more listed telephone numbers are found in that block. Numbers for the landline sample were drawn with equal probabilities from working blocks. Non-working or unassigned numbers, as well as modem and fax numbers are screened, with more than half of these numbers identified and removed from the sample. All remaining numbers were presumed to be households with someone aged 18 years or older qualified to complete the interview. The anticipated response rate for landlines was 15%. A total of 26,403 landline numbers were sampled with 17,028 remaining following screening. Samples were drawn 7 times over the course of data collection. Table 6 details the samples drawn.

Table 6. Landline Numbers Selected, Screened, and Included in the Sample

	Draw	Disconnected	Included
September/October	3250	1115	2135
October/November	4062	1388	2674
November/December	4062	1635	2427
January/February	4062	1620	2442
February/March	4062	1608	2454
April/May	4062	1210	2852
May/June	2843	997	1846

RDD Cell Phone Sample Methodology. The other half of the sample was drawn through systematic sampling from dedicated wireless blocks. Like the landline sample, numbers for the cell phone sample were drawn with equal probabilities from working blocks. The RDD cell sample than had the activity code appended to denote numbers that have been used in the last 10 months. All remaining numbers require individuals under 18 years of age and those that have moved out of the state and kept their number to be screened out of the sample. It was approximated that 30% would be screened out based on age (i.e., assigned to someone under 18

years old) and that 10% would be screened out based on non-Pennsylvania residency. The anticipated response rate for cell phones was 10%. A total of 30,472 cell phone numbers were sampled with 22,350 remaining after activity code appending. Samples were drawn 7 times over the course of data collection. Table 7 details the samples drawn.

Table 7. Cell Phone Numbers Selected, Screened, and Included in the Sample

	Cell Phone		
	Total	Inactive	Included
September/October	3750	595	3155
October/November	4688	772	3916
November/December	4688	1290	3398
January/February	4688	4049	3139
February/March	4688	1617	3071
April/May	4688	1363	3325
May/June	3282	936	2346

Contact Procedures

Calls were staggered over days of the week and times of day to maximize the chance of contact with potential respondents. Apart from numbers that were confirmed to be disconnected, fax machines, or businesses on the first call attempt, all numbers were attempted a minimum of three times, once during each calling period: weekday, weekday evening, weekend. Call attempts with no answer or that were not diverted to an answering device were allowed to ring between 7 and 10 times. A message was left on any answering devices providing the name of the interviewer calling, the reason for the call, and a number for the participant to call back. If potential participants called back and indicated that they did not wish to be contacted, calls to their number discontinued.

Calls to sampled landline numbers were scheduled for 80% of the numbers to be called on weeknights between 5:00 pm and 9:00 pm or weekends and 20% to be called on weekdays between 9:00 am and 5:00 pm. Maximum call attempts to numbers were capped at 15 calls. One eligible respondent (aged 18 or over) from the household was randomly selected per household to be interviewed using the most recent birthday method.

Calls to sampled cell phone numbers were scheduled for approximately 30% of the numbers to be called on each calling period with maximum call attempts capped at 8 calls. When individuals answered cell phone numbers, screening questions were asked to ensure that they were over 18 years old and that they were residents of Pennsylvania.

Data Collection and Sample

Data collection began in October 2021 and continued through June 2022 with 154,962 calls made to 39,179 numbers (Cell = 22,349; Landline = 16,803). An average of 4.590 (*SD* = 3.490) calls were made to landline numbers and 3.48 (*SD* = 1.481) calls were made to cell phone numbers.

Call Dispositions and Response Rates

Each number in the sample was assigned a final disposition code to indicate the result of calling the number. Dispositions, consistent with American Association for Public Opinion Research (AAPOR) and the categories identified by Ezzati-Rice and colleagues (2000), were assigned after each call attempt.

The resolution rate (percentage of numbers in the total sample for which eligibility has been determined) was calculated for landline and cell phones separately. Resolution rates were 15.29% and 16.58% for landlines and cell phones respectively. Response rates (i.e., contact, cooperation, refusal, and response rate) were calculated using the AAPOR survey rate calculator 4.1 (2020) for DFRDD. Summary dispositions and response rates are detailed in Table 8. In comparison, other DFRDD studies conducted in Pennsylvania since 2020 have reported response rates of less than 1% (Catt & Hroncich, 2020) and 1-4% (Collins et al., 2020). Similarly, a recent national study reported a response rate of 6% (Ferguson et al., 2022).

Table 8. Frequency of summary dispositions and response rates.

Disposition	Landline	Cell Phone	Combined
Non-Working	4623	4572	9195
Non-Residential	1294	342	1636
Non-Contact	4325	2746	7071
Unknown Household Status			
Household Status Unknown	1665	5160	6825
Likely Household	2	10	12
Known Household			
Screener Incomplete	3271	6671	9942
Non-Eligible	86	705	791
Eligible			
Not Complete	430	875	1305
Refusal	175	157	332
Break-off	22	52	74
Partial Complete	15	28	43
Complete	922	1031	1953
AAPOR Contact Rate 2	21.60%	19.30%	20.40%
AAPOR Cooperation Rate 2	59.90%	49.40%	54.40%
AAPOR Refusal Rate 2	2.70%	1.90%	2.28%
AAPOR Response Rate 3	12.70%	9.30%	10.90%

Questionnaire

The questionnaire underwent several significant changes between the first and second years of the study. The primary change was the elimination of so-called "filter" questions for both online and offline gambling, and instead asking each participant whether they had engaged in each type of online/offline gambling in the past year rather than first asking whether they had engaged in any online/offline gambling in the past year first. This change was made so that individuals could each be probed regarding each type, as the broad terms (in the survey terms interactive gaming or non-interactive gaming) may not provoke thoughts of specific gambling formats.

Additional changes were made to the survey instrument by including an assessment of gambling motivations, questions regarding reasons for ending an online gambling session, and beliefs about the relative harms and benefits of online gambling. The assessment of gambling problems (Volberg & Williams, 2011), 1-800-GAMBLER use, gambling formats (both online and offline) included, and demographics, remained the same.

Data Weighting

The final weighted sample is representative of adults ages 18 and older living in Pennsylvania. RIM weights were calculated on the following factors: Age (i.e., 18-64, 64-99, or not reported), Race (i.e., White only, Black/African American only, Asian only, American Indian or Native Alaskan only, Other only, 2 or more, or not reported), Ethnicity (i.e., Hispanic, Latino/a, or Spanish origin, Non-Hispanic, or not reported), Gender (i.e., man, woman, other, or not reported), and County (i.e., Non-MSA or MSA). RIM weights (Spread = 0.1030-16.257) were calculated in 7 iterations with 32.64% efficiency. Table 9 demonstrates the weighting schema achieved targets based on Pennsylvania populations estimates (U.S. Census Bureau, 2021) using complete data records. Note that in the final sample 60 participants were missing data on one or more variables used in calculating their RIM weights, missing data was replaced with linear trend at point.

Final Sample

For this analysis, the sample was limited to adults in Pennsylvania who completed the portion of the questionnaire on interactive gaming (1953 completes and 40 partial completes). The final sample size was 1,993 and margin of error for the study was $\pm$ 2.2%. After weighting procedures, the final sample was 2003, 49.3% men, and the average age was 49.72 years (*SD* = 18.34). The sample was divided between the regions of the state: 14.6% North West, 14.0% North Central, 10.3% North East, 21.0% South West, 13.9% South Central, 25.0% South East, and 1.2% were PA residents with no county provided.

Table 9. Actual, Target, and Weighted Proportions

	Unweighted Proportions	Target Proportions	Weighted Proportions
Gender Identity			
Man	46.20%	49.40%	49.10%
Woman	53.20%	50.60%	50.30%
Other gender identity	0.30%		0.30%
Prefer not to answer	0.30%		0.30%
Total	**100.00%**	**100.00%**	**100.00%**
County			
Non-MSA Counties	74.20%	26.00%	26.00%
MSA Counties	25.80%	74.00%	74.00%
Total	**100.00%**	**100.00%**	**100.00%**
Race			
Race 2 or more	0.90%	2.30%	2.20%
White Only	92.80%	81.10%	79.00%
Black or African American Only	2.20%	12.20%	11.90%
Asian Only	1.00%	3.90%	3.80%
American Indian or Native Alaskan Only	0.60%	0.40%	0.40%
Native Hawaiian or Pacific Islander Only	0.00%	0.10%	0.00%
Other Only	1.10%		1.10%
None provided	1.60%		1.60%
Total	**100.00%**	**100.00%**	**100.00%**
Age			
18-64	54.10%	78.40%	76.50%
65-99	43.70%	21.60%	21.10%
Prefer not to answer	2.30%		2.40%
Total	**100.00%**	**100.00%**	**100.00%**
Ethnicity			
Not of Hispanic, Latino, or Spanish origin	97.20%	90.60%	90.60%
Hispanic, Latino, or Spanish origin	1.80%	8.40%	8.40%
Prefer not to answer	1.00%		1.00%
Total	**100.00%**	**100.00%**	**100.00%**

Implications of Report Results

This report presents the results of the second year of the interactive gaming project in the state of Pennsylvania. This study was undertaken to best understand the impacts of online gambling legalization in the state of Pennsylvania including the prevalence of online gambling and the characteristics associated with experiencing a problem with online gambling. In the first year of the study (Russell, et al., Under Review; Sterner, et al., 2021), we began collecting data examining the impacts of online gambling legalization and determined that approximately 11.1% of Pennsylvanians had engaged in online and that 43.9% of online gamblers had experienced at least once gambling problem in the previous 12 months. In the second year of the study, the prevalence rate has remained stable at 11.0%. Rates of illegal online gambling were also similar, with 1.5% of residents engaging in illegal online gambling. The number of online gamblers experiencing a problem was lower in the second year of the study, with 36.5% expressing at least one problem. Those that gamble online are more likely to believe that all forms of gambling should be legal, as well they are less likely to report that the harms of gambling outweigh the benefits.

Limitations

This study was not without limitations, the first being that the data are cross-sectional and self-reported which restricts the ability to make causal inferences. While data has been collected over the past two years, we are utilizing unique samples each year and unable to longitudinally track individuals to examine the course of online gambling participation and its relationship with gambling problems. The study is also limited by having no baseline data examining online gambling participation and problems prior to legalization in the state of Pennsylvania. Data collection did not begin until after legalization and the opening of multiple online gambling sites. Coinciding with legalization and large expansions of online gambling offerings was the COVID-19 pandemic that did contribute to some migrating to online gambling (Shaw et al., 2021). Unfortunately, without baseline data prior to both the pandemic and legalization we are unable to determine what these impacts had on online gambling prevalence in the state. Evidence from the 1-800-GAMBLER hotline, however, does suggest a significant increase in problem gambling specific to online gambling following both expansion and the pandemic independently (CCGP, 2017, 2018, 2019, 2020, 2021, 2022a, 2022b).

Implications

This study further confirmed that engaging in multiple online gambling formats is associated with increased presence of gambling problems. This should be addressed through prevention and treatment practices, by making the public, and specifically gamblers, aware of the dangers of engaging in multiple gambling formats. These messages can be tailored to the particular audience that is most impacted by gambling, in particular men in their 30s to 40s, and providing messaging in places where they are likely to see it – with online gamblers having messaging

available online on websites they are known to frequent as well as including messaging during sporting events due to the popularity of sports betting, etc. Prior research shows that simple banner ads or pop-ups to provide messaging may not be effective due to the large number of advertisements individuals see already and the perception that they may be annoying. To combat this potential issue, online advertisements instead could be provided more like television advertisements played before and during online videos (e.g., on streaming platforms such as Twitch or on video platforms such as YouTube) as previous research for the general prevention of gambling has demonstrated that television advertisements were assessed as being the most popular medium for prevention messaging among consumers (Messerlian & Derevensky, 2007). The high rate of problems among online gamblers is also of concern, and policy and practice should attend to the features of online gambling that may increase the risk of developing a problem – such as the reported convenience and availability of online gambling, as well as the ability to feel anonymous. The nature of online gambling may make it more difficult to detect those experiencing a gambling problem versus those that engage in offline gambling formats (due to issues such as anonymity). Observations of gambling behaviors, monitoring individual communications on gambling platforms, and even deposit and withdrawal behaviors, may be used to predict those at risk of developing a gambling problem or who may already present with a gambling problem (Haefeli, Lischer, & Schwarz, 2007). In conjunction with this detection should be resources for these individuals, such as the 1-800-GAMBLER hotline or information on local treatment providers.

Future Directions

We will continue to monitor the prevalence of online gambling in the state of Pennsylvania, as well as associated gambling problems. Moving into future assessments we plan to further modify the questionnaire to better evaluate the full spectrum of gambling behaviors, including measures of frequency, expenditure, and time spent gambling to better evaluate gambling involvement. In addition, we plan to include newly emerging formats (e.g., gambling on and within video games) and gambling-like behaviors (e.g., purchase of crypto currencies and non-fungible tokens) to best assess the full spectrum of gambling formats (both online and off) that are being engaged in within the state. Furthermore, we plan to adapt our recruitment methodology by offering the ability for individuals to complete the assessment online when it is convenient to them, as well as a greater confidence that their responses will be anonymous and potentially less likely to be subject to the effects of social desirability.

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[1] SD refers to standard deviation, a way of measuring how different one number may be from the average; a smaller standard deviation means that most numbers are fairly close to the average. The standard deviation lets you know, on average, how much the data is scattered around the average value.

[2] Note that here problems does not refer to classification as a problem gambler but rather each of the items listed in Table 3 (these are the items from the Brief Problem Gambling Screen; BGPS) and how many individuals tend to endorse experiencing. Individuals were provided with the items of the BGPS, where the presence of a single problem on the screen suggests the need for further assessment to determine whether an individual may be a problem gambler.